

REMARKS

The Examiner is thanked for the careful examination of the application. However, in view of the following remarks, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections.

Claims 1, 2, 5 and 13 have been rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,371,610, hereinafter Sugawa. Claim 1 of the present application defines an image processing apparatus for correcting data of each pixel in an edge area. The claimed apparatus includes, among other elements, a first judgment unit for judging whether a target pixel is in a first edge area by comparing an output from a differential filter with a first reference value and a second judgment unit for judging whether the target pixel is in a second edge area by comparing the output from a differential filter with a second reference value that is smaller than the first reference value.

In a non-limiting example of Applicant's specification referred to for explanatory purposes only, the primary differential filter unit 420 calculates the differentiation value of the lightness data of the target pixel. The value resulting from differentiation input to a comparator unit 430. Also, input to the comparator unit 430 is a reference value "Reference 1." The comparator unit compares the input differentiation value and Reference 1 to see which is greater and outputs an edge signal 1 in accordance with the comparison result.

In second area judgment unit 500, Reference 4 is input to a comparator unit 530 and is set at a value smaller than Reference 1 input to the comparator unit 430. By setting these two Reference values in this manner, the second area judgment unit 500 serves to detect edge areas that the first area judgment unit 400 is unable to

detect. Specifically, the second area judgment unit is capable of detecting natural image edge areas where difference in density with background images is not as large as in the case of character edge area (see Applicant's specification at paragraphs [0061]-[0062] and [0085]-[0086]).

The Examiner alleges that Sugawa discloses two judgment units at column 4, lines 40-65. However, Sugawa discloses an image data processing apparatus having an image discriminator 25 that is used to determine certain characteristics of the image data. See Figs. 2 and 4.

Specifically, the binary attribute discriminator 251 within the image discriminator 25 determines whether or not the segmented area E corresponds to a character image or a halftone image. As illustrated in Fig. 5, the binary attribute discriminator 251 includes a memory 2511, an edge detector 2512, and an edge discriminator 2513. The image data from the memory 2511 is passed through the edge detector 2512, which outputs a value referred to as "edge detection amount." Sugawa discloses of col. 4, lines 57-65 the edge discriminator 2513 outputs an indication "character area" when the edge detection amount output by the edge detector 2512 is greater than a discriminant threshold level and an indication "halftone area" when the detection amount is less than the threshold level.

Thus, Sugawa does not disclose comparing an output from a differential filter with a first reference value and comparing the output from a differential filter with a second reference value that is smaller than the first reference value as in claim 1.

Furthermore, in Sugawa there is no second edge area detected. Instead, Sugawa assumes there are no edges in the halftone area. As discussed in Applicant's specification at paragraph 54, merely for the purpose of explanation, the

second area judgment unit 500 is provided in order to detect edge areas of an image having a halftone area where difference of an edge pixel density with surrounding pixels is not so great in comparison with a character edge pixel.

Because Sugawa does not teach or suggest the claimed first and second judgment units, Sugawa also cannot teach or suggest the first and second correction units as defined in claim 1. In particular, since there is no second edge area detected, there at least can be no second correction unit for conducting second correction processing on data of each pixel that is judged by the second judgment unit to be in the second edge area. Put another way, Sugawa does not teach or suggest two different correction units for processing edge areas differently.

Accordingly, claim 1 and dependent claims 2 and 5 are patentable over Sugawa.

Claim 13 defines an image processing method that involves judging whether a target pixel is in the first edge area by comparing an output from a differential filter with a first reference value, and judging whether the target pixel is in a second edge area by comparing the output from a differential filter with a second reference value that is smaller than the first reference value. For at least the reasons discussed above with respect to claim 1, Sugawa also does not teach or suggest the method of claim 13.

Claims 3, 4, and 6-12 have been rejected under 35 U.S.C. §103(a) as being obvious over Sugawa in view of U.S. Patent No. 5,357,353, hereinafter Hirota. The Examiner relies on Hirota for an alleged teaching of the data including chromatic color component data and achromatic color component data and the second correction unit that conducts correction processing only on the achromatic color component data. However, that portion of Hirota does not overcome the deficiency

of Sugawa as set forth above. Accordingly, claims 3, 4, and 6-12 are also patentable over the applied prior art.

In view of the foregoing remarks, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejection. In the event that there are any questions concerning this Amendment, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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